Auscultations

Refrigerator blindness: selective loss of visual acuity in association with a common foraging behaviour

The Case: Three male offspring, aged 9–14 years, of one of the authors (M.B.) were observed to experience visual problems profound enough to imply functional blindness. The visual deficit was evident on almost every occasion when any one of the children of this physician went to the refrigerator and opened the door. The acute visual problem encountered was noted to be part of a consistent behaviour pattern, wherein a few seconds after the fridge door was opened a cry would be heard from the affected child of "Mum, where's the milk [or any other item being sought]?" This vocalization was made without regard to the physician's distance from

the fridge or engagement in any other activity. Shouted directions as to the location of the object only occasionally led to it becoming visible. Even with calm and constructive maternal encouragement and direction the desired object typically would remain unseen until the mother-physician attended the fridgeside and physically identified the precise location of the item.

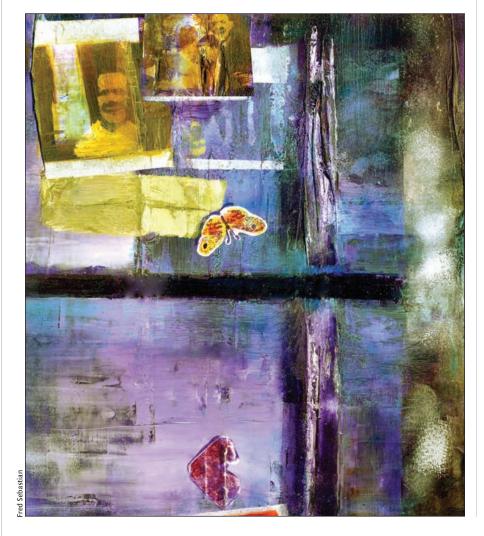
This behaviour was noted only sporadically among the female members of the household, but was unremitting among the males. Attempts at patient empowerment through counselling — "Surely someone of your age can find the ..." — rarely led to success, and di-

agnostic accusations such as "Are you blind?" appeared to aggravate the condition, possibly through subliminal trauma to the fragile male psyche.

A literature review using the search terms "blindness," "sightlessness," "loss of sight," "refrigerator," "Frigidaire" and "hereditary difficulty" for the years 1994–2004 yielded no case reports or genome-mapping references to refrigerator/fridge blindness in children or adults. We believe therefore that we report a previously undescribed condition.

Comments: Anecdotal evidence would indicate that this condition, to which we apply the term "refrigerator blindness," is widespread but occurs predominantly among teenage males. Indeed, in North America almost all members of this segment of the population seem to have episodic, isolated behaviours compatible with early-onset refrigerator blindness. However, others are also afflicted; sporadic cases have occurred among teenage girls, although we have yet to meet an adult female who will admit to the condition. Married adult males in most households demonstrate symptoms on occasion, but with a lower frequency than among adolescent males, which suggests that the condition becomes less severe with advancing age, most likely through spousal conditioning. However, human males who remain single exhibit an adaptive resilience to refrigerator blindness.

The prevalence of refrigerator blindness among prepubertal children raises the question, Could the current epidemic of obesity occurring among young Canadian males¹ be due in part to refrigerator blindness? Presumably, selection of undesirable food items from the refrigerator must occur with increased frequency, even if healthy food items, snacks or drinks are actually being sought, when such items cannot be seen.



DOI:10.1503/cmaj.05130

Holiday Review

Despite the high prevalence of refrigerator blindness, its cause has not been established. The predisposition of males implies a genetic mechanism, but the refrigerator itself must trigger an inborn potential, since individuals become symptomatic only when standing in front of an open fridge. Possibly the hum of this apparatus (particularly older ones) mimics sounds once heard in the nurturing confines of the uterus, subconsciously reconnecting affected individuals with an environment where their nutrition was reliably provided even when they had their eyes closed.

Sadly, there is a more sinister potential cause. An electromagnetic field is emitted by any electrical device and this causes electromagnetic interference (EMI), as we are all aware from restrictions imposed on cell phone use in hospitals² and broader restrictions on aircraft. Moreover, cell phone use has been linked to concerns regarding disordered brain function and even structural pathology. When standing close to an open fridge, a child will be engulfed by the fridge's magnetic field and remains within in it for the entire duration of the "blindness" they experi-

greater tendency to behave more like males during some thought sequencing (e.g., when thinking about how to direct someone from point A to point B⁵).

Nurture, particularly when practised in the immediate and clear terms that a lioness uses with her cubs, could well be why some children retain their fridge vision.

Implications for parenting and clinical practice: Pending further study, we hypothesize that parental advocacy that limits children's access to refrigerators, particularly for all young males, is important. It would have the benefit of decreasing the incidence of stress-related illness among parents by containing the current epidemic of refrigerator blindness, and represents a potentially effective means of slowing the alarming trend of obesity currently evident among our children. To not do this would be evidence of another form of blindness, this time among parents and health care professionals.

The condition seems to become less severe with advancing age, most likely through spousal conditioning.

The French terms for refrigerator blindness — aveuglement réfrigérateur (m) or cécité glacière (f) — suggest a visual disturbance caused by light reflecting off snow and ice. The brilliant white finish, shiny stainless steel and high-intensity lighting in modern fridges could well be contributing factors, bearing in mind that this condition is newly recognized even though refrigeration technology is now a century or more old. However, unlike in snow blindness, the condition is painless (except in the parent) and the loss of the visual field is selective, being limited to the contents of the refrigerator. It is true that many of those affected have visual difficulty with other items (e.g., not seeing a mess in their rooms, discarded clothing or dirty dishes), but these symptoms are readily explained by the influence of the primitive streak still so evident in most males, driving them to recreate an environment agreeable to them as cavedwellers.

ence. Modern fridges are larger and more powerful than older models, and some even incorporate communication technology increasing the potential for EMI,3 and thus, particularly when associated with low-amplitude vibration, could well exert an effect on sympathetic tone, signal processing or blood flow within the brain.⁴

An EMI effect also fits the geographic specificity of the symptoms and explains the predominance of refrigerator blindness among children rather than among adults on the basis of the vastly different body-mass-to-EMIdose factor between a child and an adult. Similarly, the male:female predominance would result from EMI readily compromising the simplistic, task-oriented thought processes of the male, but exerting little or no effect on the sophisticated and emotionally savvy workings of the female mind. Females who do show symptoms may be those exposed to higher levels of testosterone in utero; certainly, this group has a

Andrew J. Macnab **Mary Bennett**

Department of Paediatrics University of British Columbia Division of Critical Care BC Children's and Women's Hospital Vancouver, BC

REFERENCES

- Ball GDC, McCargar LJ. Childhood obesity in Canada: a review of prevalence estimates and risk factors for cardiovascular diseases and type 2 diabetes. Can J Appl Physiol 2003;28(1):117-40.
- Lawrentschuk N, Bolton DM. Mobile phone interference with medical equipment and its clinical relevance: a systematic review. Med J Aust 2004;18(3):
- Macnab AJ, Gagnon RE. Electromagnetic interference testing of somatosensory and near-infrared devices used in the microgravity and hospital environments. Aviat Space Environ Med 1996;67(11):
- Macnab AJ, Chen Y, Gagnon F, et al. Vibration and noise in paediatric emergency transport vehicles: A potential cause for morbidity? Aviat Space Environ Med 1995; 66(3):212-9.
- Harrell WA, Bowlby JW, Hall-Hoffarth D. Directing wayfinders with maps: the effect of gender, age route complexity, and familiarity with the environment. J Soc Psychol 2000;140(2):169-78.